WHAT IS CLAIMED IS:

1. A nanotube-amino acid composition having the general formula:
$SWNT\text{-}[\text{-}NH\text{-}(CH_2\text{-})_n\text{-}COOH]_m$
where n is between about 1 and about 20, and m is between about 1 and about 10,000.

2. The nanotube amino acid composition of claim 1, wherein the length of said composition is between about 5 nm and about 5 μm.

3. The nanotube amino acid composition of claim 1, wherein the water solubility of said composition exceeds that of unfunctionalized SWNTs.

4. A method comprising the steps of:
a) providing a plurality of fluorinated SWNTs;
b) reacting said fluorinated SWNTs with an ester of an amino acid to form amino ester-functionalized SWNT; and
c) hydrolyzing said amino ester-functionalized SWNT to yield a nanotube-amino acid composition 4.

5. The method of claim 4, wherein the fluorinated SWNTs comprise a stoichiometery CF_n, where n ranges from about 0.01 to about 0.5.

6. The method of claim 4, wherein the step of reacting further comprises a pyridine catalyst.

7. The method of claim 4, wherein the step of reacting comprises a reaction temperature that ranges from about 25°C to about 150°C.

8. The method of claim 4, wherein the step of hydrolyzing comprises use of an alkali carbonate.

9. The method of claim 4, wherein the step of hydrolyzing comprises use of an alkali bicarbonate.

10. A nanotube-amino acid composition having the general formula:
SWNT-[-(CH_2-)$_n$-CH(NH_2)-COOH]$_m$
where n ranges from about 1 to about 20, and m ranges from about 1 to about 10,000.

11. The nanotube amino acid composition of claim 10, wherein such a composition is viewed as an amino acid with the general formula:
H_2N-C(H)(R)-C(O)-OH,
where R is treated as a point group comprising a SWNT and all the other amino acid functional groups attached thereto.

12. The nanotube amino acid composition of claim 10, wherein the length of said composition is between about 5 nm and about 5 μm.

13. The nanotube amino acid composition of claim 10, wherein the water solubility of said composition exceeds that of unfunctionalized SWNTs.

14. A method comprising the steps of:
a) reacting SWNTs with a peroxide species **6** to yield carboxylic acid-functionalized SWNT species **7**;
b) reacting carboxylic acid-functionalized SWNT species **7** with Br_2 to yield brominated SWNT species **8**; and
c) reacting brominated SWNT species **8** with NH_3 to yield nanotube-amino acid product **9**.

15. The method of claim 14, wherein the SWNTs have lengths that range from about 5 nm to about 5 μm.

16. The method of claim 14, wherein the SWNTs have diameters that range from about 0.5 nm to about 3 nm.

17. The method of claim 14, wherein the step of reacting SWNTs with a peroxide species comprises a suitable solvent medium selected from the group consisting of ortho-

dichlorobenzene, xylenes, toluene, mesitylene, benzene, chlorobenzene, and combinations thereof.

18. The method of claim 14, wherein the step of reacting SWNTs with a peroxide species comprises an application of heat.

19. The method of claim 14, wherein the step of reacting carboxylic acid-functionalized SWNT species **7** with Br_2 comprises a catalyst selected from the group consisting of elemental phosphorus, PBr_3, and combinations thereof.

20. The method of claim 14, wherein the step of reacting carboxylic acid-functionalized SWNT species **7** with Br_2 is carried out in CCl_4.